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# **Roadless Area Conservation**

## **National Forest System Lands in Idaho**

### **TEPCS Plants Specialist Report**

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## Abstract

This report represents background information and analysis of the rarest elements of the Idaho flora – threatened, endangered, proposed, candidate, and sensitive<sup>1</sup> (TEPCS) plant species for the alternatives analyzed in Chapter 3 of the Forest Service Final Roadless Area Conservation – Environmental Impact Statement (FEIS) for Idaho, August 2008. The four alternatives considered in this analysis are:

- 2001 Roadless Rule – Management direction based on the Roadless Area Conservation Final EIS, November, 2000 referred as the 2001 Roadless Rule (considered the no action alternative),
- Existing Forest Plans (Existing Plans)– Management direction based on Forest Plans for Forests located in Idaho,
- Proposed Idaho Roadless Rule (Proposed Rule)– Management direction based on the Petition of Governor James E. Risch for Roadless Area Management in Idaho, and
- Modified Idaho Roadless Rule (Modified Rule)– Management direction as adjusted following public comment on the draft EIS.

The Existing Plans, Proposed Rule, and Modified Rule alternatives place acreages in the General Forest, Rangeland, and Grassland theme that would allow the most road building and associated other uses. The 2001 Rule has no GFRG category. About 1,264,100 acres in Existing Plans are in management prescriptions equivalent to GFRG. The Proposed Rule would designate approximately 609,600 acres to GFRG. The Modified Idaho Roadless Rule developed as a result of public comments on the draft EIS reduced the amount of GFRG to 405,900 acres. All alternatives considered would: (1) prohibit most road construction and reconstruction, (2) prohibit timber harvest designed exclusively for commodity production purposes, and (3) allow timber harvest for stewardship purposes. They all would also allow management practices that are intended to reduce the risk of large, severe wildfires that can damage water, soil, and air resources on both National Forest System (NFS) lands and adjacent or downstream lands.

Plant species that are federally listed are protected under the provisions of the Endangered Species Act (ESA) 1973, as amended (16 U.S.C. 1536(c), 50 CFR 402) as well as regulation and policy which requires that the Forest Service conserve and help recover endangered and threatened species. Sensitive species, as designated by the Regional Foresters, are similarly protected by Forest Service policy (FSM 2670.44). National Forests are required to develop programs to maintain viable populations within planning areas and to identify and mitigate potential effects to these species from federal land-disturbing activities. In order to comply with the ESA and Sensitive species policy, Forest botanists and plant specialists conduct inventories during project planning to locate, protect, and mitigate any effects to TEPCS plants in project areas.

Currently, 68 plant taxa (species, subspecies, or varieties) designated as sensitive by the Regional Foresters occur within Idaho Roadless Areas on NFS lands based on GIS analysis data; 28 in the Intermountain Region (R4), and 40 in the Northern Region (R1). The Forest Service has no jurisdiction over TEPCS plant species on private lands.

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<sup>1</sup> No endangered or proposed plant species that overlap Idaho Roadless Areas.

## Changes Between Draft and Final

1. Updated data were used when available to provide the most accurate assessment of measures identified to assess risks. Tables 6 and 7 have been replaced in this document to reflect updated GIS analyses of Idaho Conservation Data Center (ICDC) data made available to us in February 2008. The new tables are based on point data for Element Occurrences (EO's) that fall within Roadless areas as opposed to extrapolation of polygon data used in the DEIS analysis.
2. Narrowleaf grape fern (*Botrychium lineare*) was removed from candidate status on Dec. 6, 2007 (USDI, Fish and Wildlife Service 2007); therefore, it has been removed from Table 1 and added to the sensitive species list.
3. Slickspot peppergrass (*Lepidium papilliferum*) was reinstated as a "proposed Endangered" species by U.S. Fish and Wildlife Service (FWS) on July 18, 2008 (USDI, Fish and Wildlife Service 2008c.). It has been added to Table 1.
4. General editorial changes and additional information to improve understanding of topics covered in the document were made.
5. Based on public comment the permissions in the Backcountry/Restoration (BCR) management theme in Proposed Idaho Rule were modified to further clarify and refine where road construction and reconstruction could occur and under what conditions. The measures (risk factors) identified in this report are assessed for all original and new management themes.
6. Added analysis for new alternative Modified Idaho Roadless Rule

## Analysis

### Methodology

To make a final determination of effects, this biological evaluation utilized a coarse filter analysis for TEPC and Sensitive plants which included the following data:

- Threatened, endangered, proposed or candidate species combined for R1 and R4 that are known or suspected to occur on NFS lands in Idaho;
- Regional Sensitive species for Region 1 and Region 4 identified as occurring within Idaho Roadless Areas (IRAs) through GIS analysis products (see Tables 2 and 3);
- Current scientific literature on the effects of land disturbance activities (roads, timber harvest, energy development, etc.) that might occur under every management alternative theme and,
- Review of the types of habitats and species potentially affected by any of the action alternatives.



## Information Used

Data sources used for this analysis includes the Idaho Conservation Data Center's (ICDC) Element Occurrence Database and their extensive information on the biology, demography, and distribution of rare plant species in Idaho; the Region 1 and Region 4 Threatened, Endangered, and Sensitive Species Lists. All other sources of information and literature are cited in the text.

The analysis of direct, indirect, and cumulative effects on sensitive plants used the most recent literature and existing available information, as well as data related to past, present, and reasonably foreseeable events that have occurred or may occur in the sensitive plants analysis area. Applicable past and present, and foreseeable events described in the "Scope of the Analysis" section of Chapter 1 were considered during the evaluation of the affected environment. The condition of the affected environment, together with applicable reasonably foreseeable events as described in the above-mentioned section, were considered during the analysis of the environmental effects of the alternatives.

## Assumptions

- Differences in the amount of GFRG among alternatives are not great: 1,263,200 in the Forest Plans and 609,600 acres for all Forests in the Proposed Rule. The Modified Rule now reduces this amount to 405,900 acres. These changes represent approximately 0.024%, 0.011%, and .008% of Idaho's total 53,487,360 acre land area, respectively. None of the changes are expected to be significant at the statewide scale for the risk factors used in this analysis. However, the differences may be important at site specific locations. Site specific evaluations would be done during project planning to address specific species and their habitats within project areas.
- Future timber harvest activities would be conducted primarily for fuels treatment around communities within community protection zones (CPZ) to reduce significant risk of wildfire effects. Over 15 years it is estimated that the 2001 Rule would harvest 9,000 acres, Existing Plans would harvest 40,500 acres, the Proposed Idaho Roadless Rule would harvest 18,000 acres, and the Modified Idaho Roadless Rule would harvest 15,000 acres.

Discretionary mineral activities may increase in some IRAs due to mineral resource demands to meet energy needs.

- Conservation rules of thumb:
  - Areas with less ground disturbance are generally better for TEPCS than areas with higher ground disturbance.
  - Areas with low road densities are better for TEPCS plant species than areas with higher road densities.
  - The larger the population's size, the greater the chance of persistence.
  - Interconnected populations that form a metapopulation are better than fragmented isolated populations.
  - Preserving genetic and phenotypic diversity requires maintaining populations through a wide geographic range in a variety of habitats.
  - Maintaining plant-pollinator relationships and pollinator habitat is critical to reproductive fitness and species persistence.

## Affected Environment

The affected areas for direct and indirect effects on TEPCS plants are the Inventoried Roadless areas administered by the U.S. Forest Service in Idaho. Including federally listed and proposed species there are currently 70 plant taxa known to occur within Roadless areas on NFS lands in Idaho. Populations of these plant species are infrequent and many have a localized distribution across the landscape. They are associated with a wide array of plant communities, unique habitats, and geological formations. The character, distribution, and extent of habitats are dependent on numerous factors: the size of the area, the type, intensity and timing of management-induced and natural disturbances that have occurred; and the landscape context within which they are found. Each species is also different with respect to critical life history characteristics, habitat requirements, and ecological sensitivity. Consequently, it is extremely difficult, and potentially misleading, to generalize the effects of various management activities on all of these species. This is especially true with narrowly endemic species and populations at the fringe of their natural range. Some of the species occurring within certain management themes areas may be highlighted for discussion due to the significance of the potential effects of those activities.

The alternatives evaluated in this document represent different management strategies prescribing the conditions under which road construction/reconstruction, timber cutting, and discretionary mining could occur within Inventoried Roadless Areas in Idaho. All of the alternatives allow these activities within IRAs to some degree, albeit they vary with respect to the circumstances, locations, and extent that these activities are permissible. To present a clear, concise evaluation of these alternatives with respect to impacts on botanical resources, we have organized this section as follows:

- A general discussion on the effects of road construction/reconstruction, timber cutting, and discretionary mining on TEPCS plant species and their habitats;
- An analysis of the implications of each alternative to TEPCS species and their habitats;
- A summary that compares across the alternatives based on qualitative and quantitative differences in management strategies.

### Threatened, Endangered, Proposed and Candidate Plants

Federal land management agencies are responsible for implementing the ESA within their authorities. These responsibilities include, but are not limited to, promote the conservation and recovery of listed species and conserve the ecosystems upon which listed species depend. The U.S. Fish and Wildlife Service (USFWS) monitors and prescribes management for federally listed threatened and endangered plant species. The National Forest Management Act and Forest Service policy require that NFS lands be managed to maintain populations of all existing native animal and plant species at or above minimum viable populations levels. Relevant management direction for conservation of TEPCS species from Idaho forest plans can be found in Appendix A of this document.

In implementing the ESA, the Forest Service must ensure its activities promote the conservation and recovery of listed species and the ecosystems upon which they depend. Table 1 provides a list of plants that have federal status as threatened, proposed or candidate species. There are no plants listed as endangered within NFS lands in Idaho.

**Table 1. Threatened, endangered, proposed and candidate species on NFS lands in Idaho. Federal and State status, occurrence within IRAs, and National Forest distribution**

Species Name	Common Name	Global <sup>1</sup>	State <sup>2</sup>	Federal Status <sup>3</sup>	Occurrence within IRAs <sup>4</sup>	National Forest Distribution <sup>5</sup>
* <i>Botrychium lineare</i>	Slender Moonwort	G1	SH	Candidate	no	Sawtooth (ph on all Idaho forests)
<i>Castilleja christii</i>	Christ's Indian paintbrush	G1	S1	Candidate	yes	Sawtooth
<i>Howellia aquatilis</i>	Water Howellia	G2	S1	Threatened	no	ph (Nez-Perce, Clearwater, Idaho-Panhandle)
<i>Lepidium papillifera</i>	Slickspot peppergrass	G2	S2	Proposed Endangered	No	ph (Boise NF-Mountain Home RD)
<i>Mirabilis macfarlanei</i>	MacFarlane's four-o'clock	G2	S1	Threatened	yes	Nez-Perce (administered by Wallowa-Whitman NF)
<i>Silene spaldingii</i>	Spalding's silene	G2	S1	Threatened	no	Nez-Perce; (ph on Clearwater)
<i>Spiranthes diluvialis</i>	Ute ladies'-tresses	G2	S1	Threatened	Yes	Caribou-Targhee

**Global** - Global ranking as assigned by Idaho Natural Heritage Program, **G1** – Globally critically imperiled, **G2** – Globally imperiled. **State** - Idaho State ranking, **SH** = State Historical Occurrence, **S1** = State critically imperiled, **NF Distributions<sup>5</sup> =ph** =potential habitat.

\**Botrychium lineare* was removed from Candidate status on Dec. 6, 2007 - Federal Register Notice: "Endangered and Threatened Wildlife and Plants: Review of Native Species that are Candidates for Listing as Endangered or Threatened."

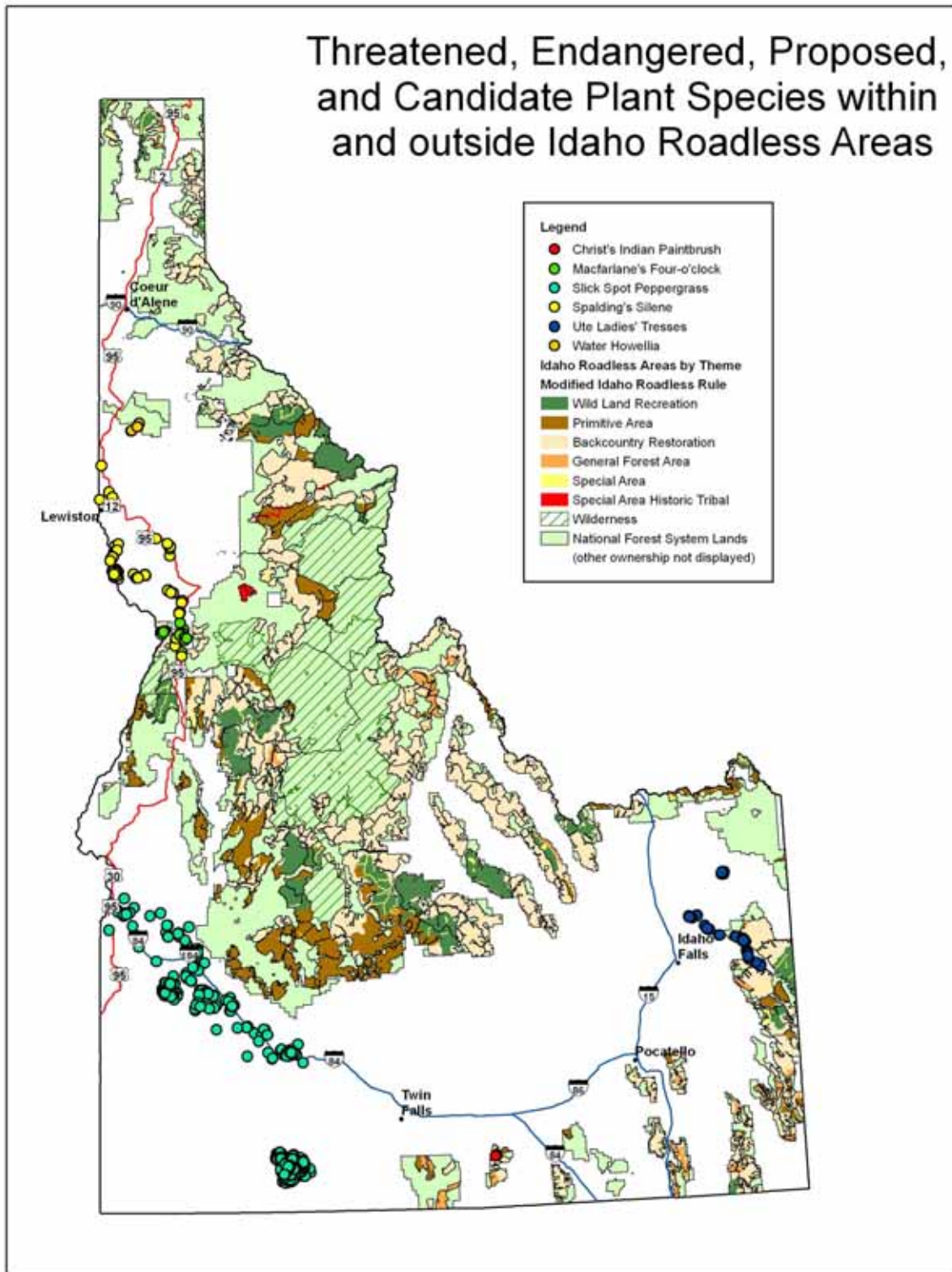
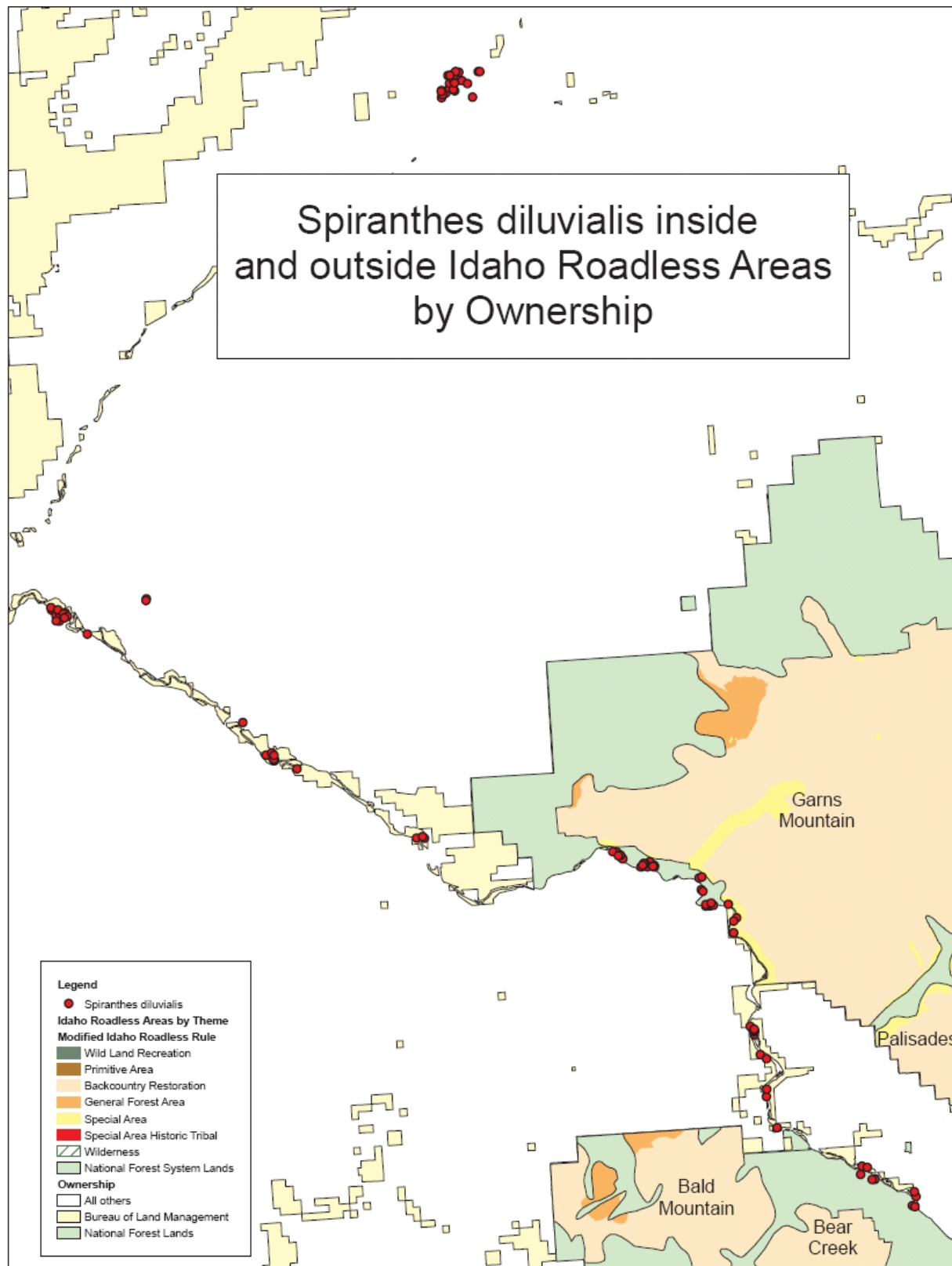


Figure 1. Distribution of Threatened, Endangered, Proposed and Candidate Plant Species Element Occurrences (EO's) within and outside Idaho Roadless Areas

**Ute ladies tresses (*Spiranthes diluvialis*)** – Ute ladies'tresses is a perennial, terrestrial orchid found in moist meadow habitats associated with floodplains, oxbows, and stream and river terraces, subirrigated or spring-fed abandoned stream channels and valleys, lakeshores, and human-modified riparian and lacustrine habitats (Fertig et al. 2005). The species is characterized by  $\frac{3}{4}$ -inch white flowers spirally arranged along 7-32-inch stems. *Spiranthes diluvialis* ranges in elevation from 720 to 1,830 ft in Washington to 7,000 feet in northern Utah. It typically occurs in stable wetland and seepy area associated with historical floodplains of major rivers as well as wetlands and seeps near freshwater springs. Occupied sites are almost always associated with a high water table, usually within 5-18 inches below the surface. Populations of Ute ladies'-tresses have been found in many western states such as: Colorado, Utah, Montana, Nebraska, Nevada, Washington, Wyoming, and Idaho. Although the range of the orchid is large, it most often occurs as localized small metapopulations that are comprised of clusters of occurrences. Ute ladies'-tresses was listed as a federally threatened species in 1992 (UDSI Fish and Wildlife Service 1992a [57 FR 2048]).

In Idaho, the species was first discovered along the Snake River floodplain in 1996 (Moseley 1998). There are 22 known occurrences scattered along the Snake River over 49 river miles, from near its confluence with Henry's Fork to below the Palisades Dam. In 2002, a new occurrence was discovered at the Chester Wetlands segment of the Idaho Fish and Game Sand Creek Wildlife Management Area (Murphy 2002) and in 2003, another occurrence was found on private land along Texas Slough (Murphy 2004). All occurrences along the South Fork of the Snake River are considered part of the same metapopulation (Murphy 2004). Five element occurrences (EO's) of Ute ladies'-tresses are found in the Garns Mountain Roadless Area on the Targhee portion of the Caribou-Targhee National Forest. This species is jointly managed by the Forest Service and BLM under the South Fork Activity Plan. Habitat for Ute ladies'-tresses orchid is found along mesic meadows and floodplains in low gradient valley bottoms along the South Fork of the Snake River.





**Figure 2. Distribution of *Spiranthes diluvialis* Element Occurrences (EO's) inside and outside Idaho Roadless Areas by ownership**

**Macfarlane's four-o'clock (*Mirabilis macfarlanei*)** - MacFarlane's four-o'clock is a long-lived perennial species narrowly endemic to portions of the Snake, Salmon, and Imnaha river canyons in northeastern Oregon and adjacent west-central Idaho. This plant usually emerges from the ground by early April, blooms May through June, sets seed by mid-summer (June to July), then dies back to a large, tuberous root growing deep in the soil until the following spring. It grows in warm, dry, river canyon grassland habitats dominated by bluebunch wheatgrass. Many of the known populations occur within the Hell's Canyon National Recreation Area. Talus rock often underlies the soils and several sites are unstable and prone to erosion. Plants are most commonly found on steep grassland slopes between 1,000 and 3,000 feet in elevation.

MacFarlane's four-o'clock is currently listed as threatened under the ESA (USDI Fish and Wildlife Service 1996 [61 FR 10693]). Originally, MacFarlane's four-o'clock was listed as endangered in 1979 (USDI Fish and Wildlife Service 1979 [44 FR 61912]) with only three known populations. Since then, additional populations have been discovered resulting in the change to threatened status March 15, 1996. Critical habitat has not been designated for this species. The FWS published the Revised Recovery Plan for MacFarlane's four-o'clock (USDI Fish and Wildlife Service 2000). The nine occurrences found within the Big Canyon Roadless Area are on lands administered by the Wallowa-Whitman National Forest.

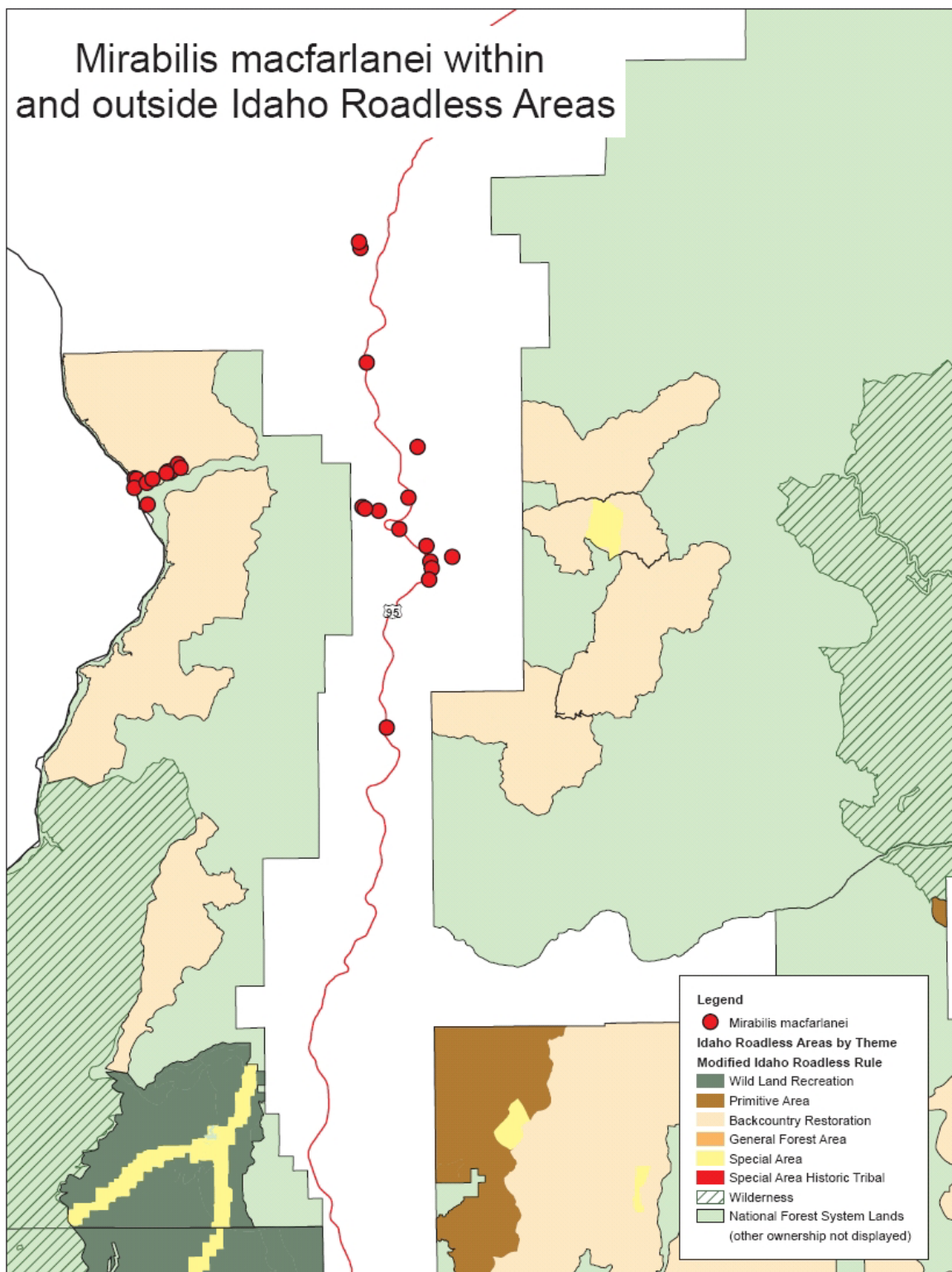


Figure 3. Distribution of *Mirabilis macfarlanei* Element Occurrences (EO's) inside and outside Idaho Roadless Areas



**Water howellia (*Howellia aquatilis*)** - Water howellia is a regional aquatic endemic which grows in ephemeral pools, glacial pothole ponds and old river oxbows. It is extremely limited throughout its range – currently known from 13 small sites in western Montana, northwest California, northern Idaho, and eastern and western Washington. The life cycle of water howellia is tied to the local hydrology of ephemeral pools and has very specific habitat requirements. A critical feature of water howellia habitat is that these ponds dry out by the end of the growing season. Most ponds are shallow with firm bottoms, have no outlet, and are depend on groundwater, flooding and precipitation as their source of moisture. Water howellia has always been considered extremely rare within the botanical record. It was listed as a federally threatened species in 1994 (USDI Fish and Wildlife Service, 1994a [59 FR 35860]). The sole occurrence known from the state of Idaho is found in Latah County on private lands along the flood plain of the Palouse River in Northern Idaho. There are no known individuals, populations or habitat on NFS lands within the Idaho Roadless Areas and will therefore not be affected by this Rule.

**Spalding's catchfly (*Silene spaldingii*)** – Spalding's catchfly is a Palouse prairie endemic restricted to mesic grasslands that make up the Palouse region in southeastern Washington, northwestern Montana, adjacent portions of Oregon, Idaho and British Columbia. In Idaho, Palouse prairie is confined to a narrow band along the western edge of central and north-central Idaho, centering on Latah County. More than 98 percent of the original Palouse prairie habitat has been lost or modified by agricultural conversion, grazing, invasion by non-native species, and urbanization (Noss et al. 1995). *Silene spaldingii* was listed as a federally threatened species under the ESA in 2001 (USDI Fish and Wildlife Service 2001a [66 FR 51598]). Several populations Spalding's catchfly occur in the west-central portion of the state, including two occurrences on the Nez-Perce National Forest primarily on steep canyon grasslands. There are no known individuals, populations or habitat on NFS lands within the Idaho Roadless Areas and will therefore not be affected by this rule.

**Slickspot peppergrass (*Lepidium papilliferum*)**. Slickspot peppergrass is a herbaceous annual or biennial plant that occurs in sagebrush-steppe habitats. It is limited to slickspots within the sagebrush-steppe in southwestern Idaho found along the Snake River Plain and Owyhee Plateau in Ada, Canyon, Gem, Elmore, Payette, and Owyhee counties, Idaho. *Lepidium papilliferum* is threatened by a variety of activities including reduction in habitat quality, invasion by non-native species, livestock trampling, increased wildfire intervals, irrigated agriculture, and off-highway vehicle use and fragmentation. It was proposed for federal listing as an endangered species in 2002 (USDI Fish and Wildlife Service 2002a [67 FR 46441]). In 2003 the FWS announced an extension of the comment period due to substantial disagreement regarding sufficiency of available data to make a final determination (USDI Fish and Wildlife Service 2003c [68 FR 42666]).

A Candidate Conservation Agreement was developed between the affected cooperating parties from Idaho to implement conservation measures to protect the plant and its habitat in 2003 resulting in the withdrawal of the final listing rule (USDI Fish and Wildlife Service 2003d and 2004). In August 2005, the District Court of Idaho reversed the withdrawal of the rule following a complaint by Western Watersheds with direction that the case be remanded to the Secretary of Interior for reconsideration. After additional review and the courts requested the FWS to make a final listing determination by January 2007. A determination to withdraw the listing rule was made on Jan 12, 2007 (USDI Fish and Wildlife Service 2007b [72 FR 1672]). Following a new June 4, 2008 court decision, the slickspot peppergrass is now been reinstated as a “proposed

endangered” species (USDI, Fish and Wildlife Service 2008c). Potential habitat may be found in the Boise National Forest on the Mountain Home Ranger District. There are no known individuals, populations or habitat on NFS lands within the Idaho Roadless Areas and will therefore not be affected by this Rule.

**Christ’s Indian paintbrush (*Castilleja christii*).** This paintbrush is a rare yellow-flowering plant found only on the top of Mount Harrison, Cassia County, on the Sawtooth National Forest, within the Mount Harrison Roadless Area. The species is confined to a 220-acre population in subalpine meadows and sagebrush habitats within the Mt. Harrison Interpretive Area, with a small portion of the population occurring within a research natural area. *Castilleja christii* is currently a candidate for federal listing under the ESA and is on the FWS 2007 Federal Candidate Notice of Review (USDI Fish and Wildlife Service 2007 [72 FR 69034]). Management of this species is guided by a Candidate Conservation Agreement recently renewed between the Sawtooth National Forest and the FWS for a ten-year period (USDA Forest Service and USDI Fish and Wildlife Service 2005).

## Sensitive Plant Species

Currently there are 68 sensitive plant taxa known to occur within 80 Idaho Roadless Areas, in addition to the federally listed and proposed species discussed in Tables 1 thru 3. Populations of these plant species are infrequent and many have a localized distribution across the landscape. They are associated with an array of plant communities, unique habitats, and geological formations. The character, distribution, and extent of habitats depend on numerous factors: the size of the area; the type, intensity and timing of management-induced and natural disturbances that have occurred; and the landscape context within which they are found. Each species is also different with respect to critical life history characteristics, habitat requirements, and ecological sensitivity. Consequently, it is extremely difficult, and potentially misleading, to generalize the effects of various management activities on all these species. This is especially true with narrowly endemic species and populations at the fringe of their natural range. Some of the species occurring within certain management themes areas may be highlighted for discussion because of the significance of the potential effects of those activities.

**Table 2. Global and State Status, Distribution, National Forest Distribution and Habitat Group for TEPCS plant species within Roadless areas in the Intermountain Region (Boise, Sawtooth, Payette, Salmon-Challis, Caribou-Targhee NFs)**

Species Name	Common Name	Global <sup>1</sup>	State <sup>2</sup>	Distribu- tion <sup>3</sup>	National Forest Distribution	Habitat Group
<i>Spiranthes diluvialis</i>	Ute Ladies' tresses orchid	Threatened G2	S1	sd	Caribou	Riparian –wet meadows
<i>Castilleja christii</i>	Christ's Indian paintbrush	Candidate G1	S1	le	Sawtooth	Subalpine grassland
<i>Agoseris lackschewitzii</i>	Pink Agoseris	G4	S2	re	S-C, Targhee	Wet meadows
<i>Allium madidum</i>	Swamp onion	G3	S3	re	Payette	Riparian -vernally wet
<i>Allium tolmiei</i> var. <i>persimile</i>	Tolmie's onion	G4/T3	S3	le	Payette	Grassland, low elev.
<i>Allotropa virgata</i>	Candystick	G4	S3	d	Payette	Forest-understory
<i>Astragalus amnis-amissi</i>	Lost River milkvetch	G3	S3	re	S-C	Cracks and ledges on vertical cliffs

Species Name	Common Name	Global <sup>1</sup>	State <sup>2</sup>	Distribu- tion <sup>3</sup>	National Forest Distribution	Habitat Group
<i>Astragalus aquilonius</i>	Lemhi milkvetch	G3	S3	le	S-C	Rock-unstable slopes
<i>Astragalus vexilliflexus</i> var. <i>nubilus</i>	White Cloud milkvetch	G4/T2	S2	le	Sawtooth	Subalpine/alpine
<i>Botrychium lineare</i>	Slender moonwort	G1	SH	re	Sawtooth	Moist meadows, springs
<i>Calamagrostis tweedii</i>	Cascade reedgrass	G3	S2	re	Payette	Forest-open gap
<i>Chrysothamnus parryi</i> ssp. <i>montanus</i>	Centennial Rabbitbrush	G5T1	S1	re	Targhee	Talus slopes & soils
<i>Collomia debilis</i> var. <i>camporum</i>	Flexible alpine collomia	G5T2	S2	le	S-C	Talus slopes and soils
<i>Cymopterus davisii</i>	Davis' wavewing	G3	S3	le	Sawtooth	Subalpine, grassland
<i>Cymopterus douglassii</i>	Douglas' wavewing	G3	S3	le	S-C	Subalpine meadows
<i>Douglasia idahoensis</i>	Idaho Douglasia	G3	S2	re	Boise	Subalpine, open
<i>Draba globosa</i>	Pointed draba	G3	S2	d	Sawtooth	Alpine
<i>Halimolobos perplexa</i> var. <i>perplexa</i>	Puzzling Halimolobos	G4/T3	S3	le	Payette	Grassland, forest
<i>Haplopappus insecticuriis</i>	Bugleg Goldenweed	G3	S3	le	Sawtooth	Shrubland
<i>Lesquerella paysonii</i>	Payson's bladderpod	G3	S2	p	C-T	Sparsely vegetated ridges & openings
<i>Mimulus clivicola</i>	Bank monkeyflower	G4	S3	re	Payette	Shrubland, forest gap
<i>Oxytropis besseyi</i> var. <i>salmonensis</i>	Challis crazyweed	G5T3	S3	re	Salmon-Challis	Sagebrush and desert scrub
<i>Penstemon lemhiensis</i>	Lemhi Penstemon	G3	S3	re	S-C	Sagebrush and desert scrub
<i>Phacelia minutissima</i>	Least Phacelia	G3	S2	re	Sawtooth	Shrubland, woodland, riparian
<i>Poa abbreviata</i> ssp. <i>marshii</i>	Marsh's bluegrass	G5/T2	S1	re	Salmon-Challis	Alpine
<i>Rubus bartonianus</i>	Bartonberry	G2	S2	le	Payette	Riparian streamside
<i>Saxifraga bryophora</i> var. <i>tobiasiae</i>	Tobias' saxifrage	G5T2	S2	le	Payette	Subalpine
<i>Thelypodium repandum</i>	Wavy-leavef Thelypody	G3	S3	re	Salmon-Challis	Steep shale banks of volcanic origin; low elevation
<i>Thlaspi idahoense</i> var. <i>aileeniae</i>	Stanley Thlaspi	G3G4/T3	S3	le	Sawtooth	Decomposed granitic outcrops

**Global<sup>1</sup>** = Global ranking as assigned by Natural Heritage Program and Idaho Native Plant Society. **T** = USFWS threatened, **PT** = USFWS proposed threatened, **C** = USFWS candidate

**State<sup>2</sup>** = Idaho State ranking, Idaho Native Plant Society Rare Species list 2007

**Distribution<sup>3</sup>** = **d** = disjunct, **le** = local endemic (< 100 square miles), **re** = regional endemic (distribution 100-10,000), **sd** = sparsely distributed (isolated populations), **p** = peripheral, **w** = widespread, **cb** = circumboreal, circumpolar.

**Table 3. Global and State Status, Distribution, National Forest Distribution and Habitat Group for TEPCS plant species within Roadless areas in the Idaho portion of the Northern Region (Idaho-Panhandle, Nez-Perce, Clearwater NFs)**

Species Name	Common Name	Global <sup>1</sup>	State <sup>2</sup>	Distribution <sup>3</sup>	National Forest Distribution <sup>4</sup>	Habitat Group
<i>Mirabilis macfarlanei</i>	MacFarlan's four-o'clock	Threatened G2	S2	re	Wallowa-Whitman	Grassland, steep slopes
<i>Astragalus paysonii</i>	Payson's milkvetch	G3	S3	re	NP	Forest-open gap
<i>Blechnum spicant</i>	Deer-fern	G5	S3	d	C, IP	Forest-understory
<i>Botrychium ascendens</i>	Triangular-lobed moonwort	G2G3	S1	sd	IP	Grasslands
<i>Botrychium lanceolatum</i> var. <i>lanceolatum</i>	Lance-leaved moonwort	G5T4	S3	w	C, IP, NP	Moist meadows
<i>Botrychium lineare</i>	Linear-leaved moonwort	G1	SH	sd	IP	Forest-understory, grasslands
<i>Botrychium minganense</i>	Mingan moonwort	G4	S3	w	C, IP	Forest-understory, shrublands
<i>Botrychium montanum</i>	Mountain moonwort	G3	S2	sd	IP	Forest-understory
<i>Botrychium pedunculosum</i>	Stalked moonwort	G2G3	S1	sd	IP	Forest-open gap
<i>Botrychium pinnatum</i>	Northern moonwort	G4?	S2	sd	NP	Forest-understory, grasslands
<i>Buxbaumia viridis</i>	Green bug moss (moss)	G3G4	S3	cb	IP	Forest-understory
<i>Calochortus nitidus</i>	Broad-fruit mariposa	G3	S3	re	C, NP	Grasslands, Forest-open gap
<i>Cardamine constancei</i>	Constance's bittercress	G3	S3	re	C, IP, NP	Forest-understory
<i>Carex leptalea</i>	Bristle-stalked sedge	G5	S2	w	IP	Fens
<i>Cornus nuttallii</i>	Pacific dogwood	G5	S1	d	C, NP	Forest-understory, shrublands
<i>Cypripedium fasciculatum</i>	Clustered lady's-slipper	G4	S3	sd	C, IP, NP	Forest-understory
<i>Dasynotus daubenmirei</i>	Daubenmire's dasynotus	G3	S3	le	C, NP	Subalpine, open
<i>Douglasia idahoensis</i>	Idaho Douglasia	G3	S2	re	NP	Subalpine, open
<i>Drosera intermedia</i>	Spoon-leaved sundew	G5	S1	d	IP	Fens
<i>Dryopteris cristata</i>	Crested shield-fern	G5	S2	p	IP	Wet meadows, forested wetlands
<i>Epilobium palustre</i>	Swamp willow-weed	G5	S3	w	IP	Wet sites
<i>Gaultheria hispidula</i>	Creeping snowberry	G5	S2	p	IP	Fens
<i>Hookeria lucens</i>	Light hookeria (moss)	G5	S1	w	C	Forest-understory
<i>Hypericum majus</i>	Large Canadian St. John's-wort	G5	S3	w	IP	Wetlands
<i>Iris versicolor</i>	Blueflag	G5	S2	d	IP	Wetlands

Species Name	Common Name	Global <sup>1</sup>	State <sup>2</sup>	Distribution <sup>3</sup>	National Forest Distribution <sup>4</sup>	Habitat Group
<i>Lycopodiella inundata</i>	Northern bog clubmoss	G5	S2	p	IP	Fens
<i>Lycopodium dendroideum</i>	Groundpine	G5	S2	p	IP	Forest-understory
<i>Mimulus alsinoides</i>	Chickweed monkeyflower	G5	S1	d	C	Moist cliffs
<i>Mimulus ampliatus</i>	Spacious monkeyflower	G1	S1	sd	C, NP	Moist cliffs, wet sites
<i>Phegopteris connectilis</i>	Northern beechfern	G5	S2	p	IP	Forest-understory
<i>Polystichum braunii</i>	Braun's sword-fern	G5	S1	cb	IP	Forest-understory
<i>Rhizomnium nudum</i>	Naked mniium (moss)	G4	S1	d	C, IP	Forest-understory
<i>Salix pedicellaris</i>	Bog willow	G5	S2	p	IP	Fens
<i>Scheuchzeria palustris</i>	Pod grass	G5	S2	w	IP	Fens
<i>Schoenoplectus subterminalis</i>	Water clubrush	G4G5	S3	w	IP	Wetlands
<i>Streptopus streptopoides</i>	Krushea	G5	S2	p	IP	Forest-understory
<i>Synthyris platycarpa</i>	Evergreen kittentail	G3	S3	re	C, NP	Forest-understory
<i>Thelypteris nevadensis</i>	Sierra wood-fern	G4	S1	d	C	Moist forests, streambanks
<i>Trientalis arctica</i>	Northern starflower	G5T5	S3	p	IP	Fens
<i>Vaccinium oycoccos</i>	Bog cranberry	G5	S2	cb	IP	Fens
<i>Waldsteinia idahoensis</i>	Idaho strawberry	G3	S3	re	C, NP	Forest-understory

**Global<sup>1</sup>** = Global ranking as assigned by Natural Heritage Program and Idaho Native Plant Society. **T** = USFWS threatened, **PT** = USFWS proposed threatened, **C** = USFWS Candidate

**State<sup>2</sup>** = Idaho State ranking, Idaho Native Plant Society Rare Species list 2007

**Distribution<sup>3</sup>** = **d** = disjunct, **le** = local endemic (< 100 square miles), **re** = regional endemic (distribution 100-10,000 square miles), **sd** = sparsely distributed (isolated populations), **p** = peripheral, **w** = widespread, **cb** = circumboreal, circumpolar.

**National Forest Distribution<sup>4</sup>** = **C** = Clearwater, **IP** = Idaho Panhandle, **NP** = Nez Perce

**Habitat Guilds** - TEPCS Plant species are often characterized by high habitat and microsite affinity. Due to the large number of rare species within Idaho, TEPCS plants can be assigned to one or more rare plant guilds, groupings based on similar habitat characteristics and life history requirements that are useful for the purposes of this analysis. The groupings or habitat associations used for this analysis are: aquatic, riparian, fens, grasslands, wetlands & moist meadows, forest understory, shrublands & woodlands, subalpine meadows, alpine, and rock outcrops/talus slopes. Before any action alternative would be implemented, field surveys would be conducted in all areas slated for project activities that contain high potential suitable habitat.

Table 4. TEPCS species within Idaho Roadless Areas - distribution by Habitat Guilds

<b>Riparian/ forest streambanks</b>	<b>Moist cliffs, seeps, and banks</b>
<i>Allium madidum</i> , Swamp onion	<i>Mimulus alsinoides</i> , Chickweed monkeyflower
<i>Rubus bartonianus</i> , Bartonberry	<i>Mimulus ampliatus</i> , Spacious monkeyflower
<i>Spiranthes diluvialis</i> , Ute Ladies' tresses orchid	
<i>Thelypteris nevadensis</i> , Sierra wood-fern	<b>Wetlands and moist meadows</b>
	<i>Agoseris lackschewitzii</i> , Pink Agoseris
<b>Fens and fen margins</b>	<i>Botrychium lanceolatum</i> var. <i>lanceolatum</i> , Lance-leaved moonwort
<i>Carex leptalea</i> , Bristle-stalked sedge	<i>Dryopteris cristata</i> , Crested shield-fern
<i>Drosera intermedia</i> , Spoon-leaved sundew	<i>Epilobium palustris</i> , Swamp willow-weed
<i>Gaultheria hispidula</i> , Creeping snowberry	<i>Hypericum majus</i> , Large Canadian St. John's-wort
<i>Lycopodiella inundata</i> , Northern bog clubmoss	<i>Iris versicolor</i> , Blueflag
	<i>Schoenoplectus subterminalis</i> , Water clubrush
<i>Salix pedicellaris</i> , Bog willow	
<i>Scheuchzeria palustris</i> , Pod grass	<b>Forest understory and gaps</b>
<i>Trientalis arctica</i> , Northern starflower	<i>Allotropa virgata</i> , Candystick
<i>Vaccinium oycoccos</i> , Bog cranberry	<i>Astragalus paysonii</i> , Payson's milkvetch
	<i>Blechnum spicant</i> , Deer-fern
<b>Grasslands</b>	<i>Botrychium lineare</i> , Narrowleaf grape fern
<i>Allium tolmiei</i> var. <i>persimile</i> , Tolmie's onion	<i>Botrychium minganense</i> , Mingan moonwort
<i>Botrychium ascendens</i> , Triangular-lobed moonwort	<i>Botrychium montanum</i> , Mountain moonwort
<i>Calochortus nitidus</i> , Broad-fruit mariposa	<i>Botrychium pedunculatum</i> , Stalked moonwort
<i>Halimolobos perplexa</i> var. <i>perplexa</i> , Puzzling halimolobos	<i>Botrychium pinnatum</i> , Northern moonwort
<i>Mirabilis macfarlanei</i> , MacFarlan's four-o'clock	<i>Buxbaumia viridis</i> , Green bug moss (moss)
	<i>Calamagrostis tweedii</i> , Cascade reedgrass
<b>Shrublands/ woodlands</b>	<i>Cardamine constancei</i> , Constance's bittercress
<i>Haplopappus insecticuriis</i> , Bugleg goldenweed	<i>Cornus nuttallii</i> , Pacific dogwood
<i>Mimulus clivicola</i> , Bank monkeyflower	<i>Cypripedium fasciculatum</i> , Clustered lady's-slipper
<i>Oxytropis besseyi</i> var. <i>salmonensis</i> , Challis crazyweed	<i>Hookeria lucens</i> , Light hookeria (moss)
<i>Penstemon lemhiensis</i> , Lemhi penstemon	<i>Lycopodium dendroideum</i> , Ground-pine
<i>Phacelia minutissima</i> , Least phacelia	<i>Penstemon compactus</i> , Mt Naomi penstemon
	<i>Phegopteris connectilis</i> , Northern beechfern
	<i>Polystichum braunii</i> , Braun's sword-fern
<b>Subalpine openings, meadows and grasslands</b>	<i>Rhizomnium nudum</i> , Naked mnium (moss)
<i>Castilleja christii</i> , Christ's Indian paintbrush	<i>Streptopus streptopoides</i> , Krushea
<i>Cymopterus davisii</i> , Davis' wavewing	<i>Synthesis platycarpa</i> , Evergreen kittentail
<i>Cymopterus douglasii</i> , Douglas' wavewing	<i>Waldsteinia idahoensis</i> , Idaho strawberry
<i>Dasynotus daubenmirei</i> , Daubenmire's dasynotus	
<i>Douglasia idahoensis</i> , Idaho Douglasia	<b>Alpine</b>
<i>Saxifraga bryophora</i> var. <i>tobiasiae</i> , Tobias' saxifrage	<i>Astragalus vexilliflexus</i> var. <i>nubilis</i> , White Cloud milkvetch
	<i>Draba globosa</i> , Pointed draba
<b>Cliffs, rocky outcrops and talus slopes</b>	<i>Lesquerella paysonii</i> , Payson's bladderpod
<i>Astragalus amnis-amissi</i> , Lost River milkvetch	<i>Poa abbreviate</i> ssp. <i>marshii</i> , Marsh's bluegrass
<i>Astragalus aquilonius</i> , Lemhi milkvetch	
<i>Chrysothamnus parryi</i> ssp. <i>Montanus</i> , Centennial rabbitbrush	
<i>Collomia debilis</i> var. <i>camporum</i> , Flexible alpine collomia	
<i>Thelypodium repandum</i> , Wavy-leaf thelypody	
<i>Thlaspi idahoense</i> var. <i>aileeniae</i>	
TCS – Threatened, candidate, sensitive	



## Environmental Consequences

### Effects Common to All Alternatives

In this section, a discussion of the effects that roads (their construction, reconstruction and maintenance), timber cutting, and discretionary mineral development could have on TEPCS species and their habitats in Idaho is presented.

**Road Construction, Reconstruction, and Maintenance** - Past, present, and future construction and maintenance of the roads have both adverse and positive effects on roadside plant populations. Road corridors associated with energy development in areas with or without transmission lines reduced the overall survival rate of the endangered Kern mallow (Cypher, 2005). On the other hand, road maintenance may benefit those species that have a competitive edge in disturbed environments or depend on early seral conditions to establish new individuals and populations. Roads increase access to and provide an avenue for weed invasion. Roads can be placed on ridgetops, in riparian areas, or through scree slopes, which are often important habitats for a number of species. Reconstruction and maintenance of existing roads can directly or indirectly affect plant populations by introducing competitive weeds and altering availability of light, nutrients, and moisture. Maintenance of roads may increase traffic along these roads and thus increase potential for disturbance of plant populations adjacent to roads.

**Habitat Fragmentation.** Habitat fragmentation activities have demographic and genetic consequences for rare plant species through changed interaction with pollinators, decreased migration between fragments, edge effects, and loss of genetic variation through genetic drift or and increased selfing (inbreeding depression). It is important to note, however, that these effects have not resulted in large-scale extinctions of any rare forest plants (Honnay & Bossuyt, 2005). Differential susceptibility to habitat fragmentation is expected to depend on life-history traits related to plant dispersal, establishment or persistence (Kolb and Diekmann, 2005). In the case of long-live perennials long-term persistence of small and isolated forest plant populations may be due to the fact they reproduce clonally and therefore persist for long generation times. However, the consequences of prolonged clonal reproduction (and suppression of sexual reproduction) has been that locally less adapted clones become out competed by expanding ramets of more adapted genotypes (Hartnett & Bazzaz, 1985). Almost all (90%) of angiosperms are pollinated by animals, especially insects (Wilcock & Neiland, 2002) and fragmentation can negatively affect pollinator abundance, diversity, and visitation (Steffan –Dewenter & Tscharncke, 1999). Although an increasing number of studies conclude that habitat fragmentation is broadly deleterious to native bees, not all evidence points in that direction. There is evidence that fractions of native bee communities can persist in habitats that have been modestly altered by human activities (Marlin and LaBerge 2001) and that we are only now beginning to understand the possible effects of habitat fragmentation on bees (Cane 2001). Fragmentation implies increased edge effects in habitats and that may be as important as isolation (Turner, et al 1996). Edge effects influence plant dynamics such as regeneration, interspecies competition, predation, seed dispersal and pollination (Murcia 1995). In addition, the changed microclimate of increased air and soil temperature, characterized by increased light penetration directly affects plant population dynamics. Edge effects also influence bryophyte community structure of border habitats where abrupt differences in micro-climatic conditions between the matrix and forest remnant exist (Pharo & Zartman, 2007).

**Spread of non-native invasive plants and animals and edge-dwelling species.** Non-native weeds directly affect plants and plant populations through competitive displacement above ground and in the seed bank. Indirect impacts include herbicide spraying and mechanical ground disturbance to control noxious weeds once they gain a foothold. Competition from invasive non-native species and noxious weeds can result in the loss of habitat, loss of pollinators, and decreased TEPCS species viability. Roads, trails, and canopy reduction can provide ideal pathways for the introduction of exotic and non-native species. Indirectly, herbicide spraying can destroy populations of native pollinators by contaminating nesting materials and pollen resources (Pierson and Tepedino 2000), further decreasing the viability and reproductive success of TEPCS species. Some species of non-native plants will alter hydrological regimes, changing and reducing the habitat available to TEPCS plants.

**Human Access - which can increase the impacts of trampling, herbivory, and congregation.**

The most important direct impact related to human access is trampling, both by hikers and newly available routes for ORV use (Liddle 1975, 1991). These types of activities particularly threaten many TEPCS species. Road building and the development of facilities used by recreationists also contribute to plant impacts, as these developments make more areas accessible and concentrate use. Dispersed camping and recreation have similar impacts, which are more difficult to monitor. Parking areas, particularly undesignated areas, pose similar impacts to plants. An example of the recreational impacts to plants is illustrated by *Castilleja christii*. After a road bisecting the population was paved, ORV use, dispersed recreation, and user accessibility increased. Plants next to the roadbed were lost. The long-term impacts of bisecting the population to functions such as reproduction and dispersal are still unknown. Other recreational impacts include ORV use, which can also disturb soil, affecting both habitat and potential habitat. Roads often provide easy access to plant hobbyists and collectors. Roads and trails can contribute to the spread of noxious weeds, and increase the accessibility of areas to native ungulates and livestock,

**Timber Harvest/vegetation management impacts** - Timber harvesting, road construction, and associated infrastructure development may alter the hydrologic processes for sensitive plants such as Ute Ladies' tresses orchid (*Spiranthes diluvialis*) and rare moss species of wetland-associated habitat groups (aquatic, fens and fen margins, riparian, and wet coniferous forest). Changes to the hydrologic processes at wetlands may result in both a decrease and increase of wetland water levels. Timber harvest activities create sudden changes in seral stage, or an abundance of early seral stages, and also reduce the available habitats for those plants that require mid-late seral stages (e.g. clustered lady-slipper orchid). However, those species that prefer openings, early-seral conditions, or some ground disturbance, could benefit from moderate levels of mechanical activities. Changing patch dynamics across the landscape could also have beneficial or adverse effects to TEPCS plant species and their pollinators. Restoration of historical fire regimes and conditions for different potential vegetation groups may benefit some TEPCS species in the long term.

**Phosphate development.** About 7,230 acres of phosphate deposits can be found in seven roadless areas (Dry Ridge, Huckleberry Basin, Meade Peak, Sage Creek, Schmid Peak, Stump Creek and Mount Jefferson) and are under existing lease. About 30 acres have been mined to date. About 1,100 acres, associated with the Smoky Canyon mine expansion, are reasonably foreseeable to be developed within the next 15 years. The Smoky Canyon mine expansion would affect the Sage Creek and Meade Peak roadless areas.



It is also reasonable to assume that the remaining phosphate deposits currently under lease, roughly 6,100 acres within the seven roadless areas would likely be permitted and developed sometime in the extended future (50 years or more). Using the Smoky Canyon expansion as an example of the level of activity expected, an estimated 17 miles of haul road construction and other surface mining disturbance would ultimately take place within the seven roadless areas. Prior to mining plant surveys would be conducted and any special protection measures would be applied.

**Table 5. Number of acres by Alternative and Management Theme**

	WLR	Primitive	BCR	GFRG	SAHTS	FPSSA
2001 Roadless Rule*	0	0	9,304,300	0	0	0
Existing Forest Plans	1,320,500	1,904,100	4,482,000	1,263,200	0	334,500
Proposed Rule	1,378,000	1,652,800	5,258,700	609,600	70,700	334,500
Modified Rule	1,479,700	1,722,700	5,312,800	405,900	48,600	334,500

\* The 2001 Rule is similar to the BCR theme except it does not permit road construction for timber cutting or for discretionary mineral access.

### 2001 Roadless Rule –Alternative 1

This Alternative provides the same permissions and prohibitions for all IRAs as guided by the 2001 Roadless Rule (2001 Rule). The purpose of the 2001 Rule was to ensure that inventoried roadless areas sustain their values for this and future generations.

This alternative prohibits road construction and reconstruction in inventoried roadless areas except for reasons other than timber cutting. There are seven exceptions that permit road construction and reconstruction (see Chapter 2 for a detailed description of the alternatives). The projected yearly average for road construction and reconstruction in IRAs under this alternative is 1 mile. This projected estimate is for road miles constructed (permanent and temporary) for activities permitted by the 2001 Rule under the 7 exceptions. This estimate is based on information provided from the forests in relation to previous levels of activities in the IRAs over the past 6 years and information projected forward over 5 years. There would be no roads constructed related to timber cutting. TEPCS plant species would be benefited by low amount of road construction/reconstruction under this alternative.

This Alternative prohibits timber cutting, sale, or removal except as provided in four exceptions. Of the three alternatives this one projects the least amount of timber cutting in IRAs (3.0 MMBF yearly average over approximately 600 acres). Alternatives 2 and 3 respectively project 2,700 acres, 1,200 acres, and 1,000 acres of timber cutting per year. With the added prohibition against non-stewardship timber cutting, this alternative presents a lower risk to TCS plant resources than Alternatives 2 and 3 of additional degradation or loss of habitat quality, quantity, and distribution resulting from timber cutting.

Alternative 1 does not address mineral resources except to limit road construction and reconstruction to reserved or outstanding rights, or as provided for by statute or treaty; or for the continuation, extension, or renewal of a mineral lease.

By restricting timber harvest to activities necessary for resource stewardship, many of the adverse effects of timber harvest would be minimized, while maintaining a management tool potentially needed for ecological restoration. Projected timber volume under this alternative is 3.0 MMBF per year which would be the result of timber cutting for stewardship and not

commercial product. This estimate is based on information provided from the forests in relation to previous levels of activities in the IRAs over the past 6 years and information projected forward over 5 years. Mechanical vegetation manipulation to reduce fuel loading may be desirable in some areas where there is an abnormally high risk of high intensity, large-scale fires. Fuels reduction stewardship activities may be beneficial to some sensitive plant populations if impacts to their habitats are not excessive or permanent. Other types of stewardship timber harvest to meet objectives for watershed restoration and enhancement of riparian vegetation could benefit species such as Ute Ladies' tresses orchid.

It is likely that fuel reduction activities in most inventoried roadless areas would not receive a strong emphasis. The priorities for fuels treatments would likely remain in areas where there is a risk to life and property. With the possible exception of some local site-specific examples, the prohibitions on road construction, road reconstruction and most timber harvest activities are not likely to affect the overall amount or severity of wildfires. As a result, the effects of wildfires on TEPCS plant species are likely to be similar with or without the prohibitions. This alternative would not measurably affect the current ability of the Agency to manage TEPCS plant populations or their habitat.

### **Summary of Effects –**

No adverse environmental effects to TEPCS plant species or their habitats would be expected from this alternative, since it does not directly authorize any ground disturbing activities. Ground disturbing activities allowed under this alternative include very limited road construction/reconstruction and very limited timber cutting across the entire 9.3 million acres of IRAs. Overall, the effects on biodiversity would be beneficial. This Agency and other government agencies with jurisdictional responsibilities would retain the tools necessary to manage these resources.

### **T&E and Candidate species determination for Alternative 1 –**

May affect, but is not likely to adversely affect *Spiranthes diluvialis*, *Mirabilis macfarlanei* or *Castilleja christii* populations or their habitat. Furthermore, Alternative 1 may beneficially affect these species.

### **Sensitive species determination for Alternative 1 –**

May impact individuals, but is not likely to cause a trend towards Federal listing or a loss of viability for any sensitive species. Furthermore, Alternative 1 may beneficially affect sensitive species and their habitat.

**Table 6. Threatened and Candidate Species Element Occurrences (EO's) distribution within IRA's by Alternatives and respective themes**

Scientific name	Common name	Alternative	WLR	Prim	BCR	BCR CPZ	GFRG	FPFA	SAHTS
			----- Number of occurrences -----						
<i>Mirabilis macfarlanei</i>	Macfarlane's Four-o'clock	2001 Rule	0	0	9		0	0	
		Existing Plans	0	0	9		0	0	
		Proposed Rule	0	0	9		0	0	0
		Modified Rule	0	0	3	6	0	0	0
<i>Spiranthes diluvialis</i>	Ute Ladies-tresses	2001 Rule	0	0	5		0	0	
		Existing Plans	0	0	0		0	5	
		Proposed Rule	0	0	0		0	5	0
		Modified Rule	0	0	0	0	0	5	0
<i>Castilleja christii</i>	Christ's Indian paintbrush	2001 Rule	0	0	2		0	0	
		Existing Plans	0	0	0		2	0	
		Proposed Rule	0	0	0		2	0	0
		Modified Rule	0	0	2	0	0	0	0

**Table 7. Number of Element Occurrences (EO's) by Alternatives and respective themes**

Alternative	WLR	Primitive SAHTS	BCR	BCR CPZ	GFRG	FPFA
2001 Roadless Rule	0	0	686	0	0	0
Existing Plans	81	97	284	0	55	169
Proposed Rule	90	82	336	0	9	169
Modified Rule	102	100	266	46	3	169

### Existing Forest Plans – Alternative 2

Alternative 2 would have the greatest potential for impacts to TEPCS plant species through direct mortality, habitat loss, degradation, and disturbance associated with roads, timber harvest, discretionary mining, and other activities. Approximately 83% of the 9.3 million acres of inventoried roadless areas are included in land-management plan prescriptions (does not include recommended wilderness or special areas) that would allow road construction, road reconstruction, and timber harvest. Projected road construction and reconstruction in IRAs under this alternative is 12 miles per year. This estimate includes both permanent and temporary roads for timber cutting and non-timber related activities. The projected timber harvest offer of 13.36 MMBF is estimated to occur annually on 2,700 acres. About 284 Element Occurrences (EO's) of sensitive plant are known to occur in management prescriptions similar to the Backcountry theme (table 7) and 16 EO of threatened and candidate plant species (table 6). About 1,264,100 acres are in prescriptions similar to the General Forest theme, where road construction /reconstruction and timber cutting are allowed; about 55 EO's of sensitive plant species (table 7), and 2 EO of candidate plant species (table 6) are known to occur within GFRG.

Due to the higher level of allowed ground disturbing activities, Alternative 2 would most likely fragment TEPCS populations and habitat, disrupt plant-pollinator interactions, and provide corridors for non-native species invasion of the three alternatives analyzed.

### **Summary of Effects –**

With the projected trend that roaded entry and timber harvest will highest under this alternative, and given the numerous negative direct, indirect, and cumulative effects identified in the literature associated with these activities, Alternative 2 has the greatest potential for increased risk of adverse effects to TEPCS plant species and habitat, relative to Alternatives 1 and 3 or 4.

The Caribou Forest Plan permits leasing of the estimated 6,750 acres of known unleased phosphate deposits and/or other possible roadless areas that contain undiscovered phosphate resources. These known unleased phosphate deposits occur in six roadless areas (Dry Ridge, Huckleberry Basin, Meade Peak, Sage Creek, Schmid Peak, and Stump Creek) and would likely be developed over an extended period of time (50 years or more). In addition, there are 6,870 acres of unleased phosphate deposits on the Targhee portion of the forest within the Bald Mountain, Bear Creek and Poker Creek roadless areas. An environmental analysis would have to be completed to determine how much of the 6,870 acres could actually be leased. There is a potential risk to sensitive plant species habitat on these 13,620 acres<sup>2</sup> when and if this development occurs. Site-specific analysis would occur prior to any future leasing and mitigations applied.

Existing Plans may allow road construction/reconstruction for geothermal development in Backcountry and GFRG. It is unknown where and to what degree geothermal resources would be developed; however, because about half the Idaho Roadless Areas in these themes have high to moderate potential it is likely some development would eventually occur. Currently lease applications have been submitted for geothermal exploration within 7,000 acres of the Peace Rock Roadless Area on the Boise National Forest and 33 acres of the West Panther Roadless Area on the Salmon National Forest. If fully developed, roads, transmission lines, and other facilities would likely be constructed (see appendix I for a description of general development of geothermal resources). Plant resources such as TEPCS would be considered during site-specific analysis, and mitigations would be applied.

### **T&E and Candidate species determination for Alternative 2 –**

Implementation of Alternative 2 is not likely to have any additional effects beyond what has already been consulted on for the Forest Plans.

### **Sensitive species determination for Alternative 2 –**

May impact individuals, but is not likely to cause a trend towards Federal listing or a loss of viability for any sensitive species.

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<sup>2</sup> Based on past history, phosphate mining could occur on an additional 1,910 acres around unleased KPLAs on the Caribou-Targhee National Forest (see section 3.5 Minerals and Energy).

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### Proposed Idaho Roadless Rule – Alternative 3

Building upon each forest's existing or proposed Forest Plan, the Proposed Rule categorizes individual IRAs into five broad management themes. The petition addresses activities related to road construction/reconstruction, timber cutting, sale, and removal, and discretionary mineral materials and where and when such activities are precluded or permitted. As in the 2001 Roadless Rule, road construction/reconstruction and timber cutting activities are identified as having the greatest likelihood of altering landscapes, and so causing immediate changes in roadless area values and characteristics. The Proposed Rule also addresses discretionary mineral materials because of their potential association with roads and their potential effects on roadless characteristics. The Proposed Rule does not address grazing, travel management, or wildland fire use. Management direction related to those activities would be regulated by existing analysis processes (for example, travel planning). The five theme areas are:

*Backcountry/Restoration (BCR)* – the intent of this management theme's direction is to provide a variety of recreation opportunities and ensure flexibility to maintain forest health, preserve biological strongholds for TEPCS species, and protect the ecological integrity of the areas. As in the 2001 Roadless Rule, it would allow timber cutting, sale, or removal as long as it maintains roadless characteristics and is done for the benefit of TEPCS species, maintain or restore ecosystem structure/composition, and reduce significant wildfire effects. Road construction and reconstruction are allowed under the similar provisions as in 2001 Roadless Rule (see Chapter 2).

*General Forest, Rangeland and Grassland (GFRG)* - These areas include locations that may show high levels of human use including roads, facilities, mineral exploration/extraction, grazing and evidence of tree cutting. These areas encompass a broad range of vegetative types and include forest, grassland, and rangeland or a combination thereof. GFRG areas will be managed to provide a variety of goods and services, broad range of recreational opportunities, and also to ensure the adequate flexibility to maintain forest, rangeland and grassland health. However, these areas are likely to still retain some of their roadless qualities. Road construction/reconstruction and timber cutting is allowed. There would be no constraints on mineral activities except as addressed in existing or proposed plans.

*Primitive* – These areas are generally of the primitive character and provide primitive recreation opportunities. There is minimal evidence of historical or human use; they appear natural and undisturbed. The intent of the management theme's direction is to manage these areas to protect and maintain both the primitive character and accompanying primitive recreation opportunities. Approximately 1,652,800 acres have been identified as Primitive. Timber cutting, sale, or removal is prohibited except for personal or administrative use; or where incidental to other management actions (trail clearing); or unless existing roads or aerial systems are used and the activity is needed improve TEPCS species habitat or to reduce significant fire risk. Road construction/reconstruction is prohibited except if it is provided for by statute or treaty. The Forest Service will not recommend, authorize, or consent to road construction/reconstruction associated with new mineral leases, or authorize surface occupancy except those permitted pursuant to the Geothermal Steam Act. The sale of common variety minerals is prohibited.

*Special Areas of Historic and Tribal Significance (SAHTS)*– these area are managed to be relatively undisturbed by human management activities in order to maintain their unique Tribal or historic characteristics. SAHTS would be managed in a manner similar to the Primitive theme.

*Wild Land Recreation (WLR)*- In these Wild Land recreation areas natural processes are predominant and show little evidence of historical or human use. These areas have been recommended as wilderness in current or proposed Forest Plans. The intent of the management theme's direction is to manage these areas to protect the wilderness characteristics and primitive recreation opportunities if and until Congress exercises its authority pursuant to the Wilderness Act to formally designate the area "Wilderness." Approximately 1,378,000 acres have been identified as wild land recreation areas. Timber cutting, sale, or removal is prohibited except for personal or administrative use. Road construction/reconstruction is prohibited except if it is provided for by statute or treaty; or it is needed pursuant to reserved or outstanding rights.

Discretionary mineral activities: the Forest Service will not recommend, authorize, or consent to surface occupancy, or road construction/reconstruction associated with new mineral leases. The sale of common variety minerals is also prohibited.

*Forest Plan Special Areas (FPSA)*- These include special area designations under existing or proposed plans such as Research Natural Areas, recommended or designated Wild and Scenic Rivers, Geological Special Interest Areas. These areas will be managed according to existing or proposed forest plan direction, or specific direction provided by Congress.

### Summary of Effects –

Under this Alternative fewer acres are managed under GFRG theme than under the Existing Plans (Alternative 2). Projected timber cutting under this alternative would average 5.83 MMBF under the combined themes of GFRG, Backcountry and Primitive, as compared to the 13.36 MMBF allowed under existing Forest Plans. Road construction/reconstruction associated with timber harvest would average 3 miles annually compared to 12 miles under existing Forest plans. Annual harvest acres are projected to average approximately 1,200 acres per year. This is about .1% of the total inventoried acres over 15 years.

The Idaho Roadless Rule would permit road construction/reconstruction and surface occupancy within the Backcountry and GFRG themes to access unleased phosphate deposits. There are 14,460 acres of known unleased phosphate deposits on the Caribou-Targhee National Forest. About 13,190 acres<sup>3</sup> (91 percent) are located within the Backcountry and GFRG themes. These deposits are located within nine roadless areas (Dry Ridge, Huckleberry Basin, Meade Peak, Sage Creek, Schmid Peak, and Stump Creek on the Caribou portion of the forest and Bald Mountain, Bear Creek, and Poker Creek on the Targhee portion of the forest) and could eventually be mined over an extended period of time (50 years or more). There is a potential risk to sensitive plant species habitat on these 13,190 acres when and if this development occurs. Site-specific analysis would occur prior to any future leasing and mitigations applied.

About 1,280 acres of unleased phosphate deposits are in the Primitive theme. The Primitive theme prohibits road construction/reconstruction or surface occupancy for phosphates; therefore this area would likely not be developed (see Minerals Specialists Report); and there would be no effect to plant species found in this area.

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<sup>3</sup> Based on past history, phosphate mining could occur on an additional 1,850 acres around unleased KPLAs (see section 3.5 Minerals and Energy).



The Proposed Rule would also allow road construction/reconstruction for geothermal development in the GFRG theme. About 7 percent of Idaho Roadless Areas are in this theme, and about 4 percent could be developed because of slope restrictions (see Minerals Specialists Report). It is likely some of these areas would be developed over time; however, except for two pending lease applications there is no information about where or when the activity would occur. If fully developed, roads, transmission lines, and other facilities would likely be constructed. Plant resources would be considered during site-specific analysis, and mitigations would be applied.

Currently lease applications have been submitted for geothermal exploration within 7,000 acres of the Peace Rock Roadless Area on the Boise National Forest and 33 acres of the West Panther Roadless Area on the Salmon National Forest. Both these areas are in either the Primitive or Backcountry theme; therefore, they would not be developed because of the inability to construct roads to access the area (see Minerals Specialists Report). No plant resources would be affected in these areas.

Potential adverse impacts to TEPCS plant species through direct mortality, habitat loss, degradation, and disturbance associated with roads, timber harvest, discretionary mining, and other activities would be intermediate between those under the 2001 Roadless rule and Existing Forest Plan alternative(s). Road construction/reconstruction and timber cutting would be permitted in limited situations in Backcountry (5,258,800 acres) and would be permissible in GFRG (609,600 acres). Two EO's of *Castilleja christii* are known to occur in GFRG (table 6) and nine sensitive plant EO's are known to occur in GFRG. All 9 EO's of *Mirabilis macfarlanei* and 336 EO's of sensitive plants occur in the Backcountry theme (tables 6-7). At the programmatic level, it is difficult to determine effects to individual populations or specific habitat niches, except on a very broad scale. As such, this Agency and other government agencies with jurisdictional responsibilities would retain the tools necessary to manage these resources. This Alternative would not change current TEPCS plant direction and would require site-specific analysis prior to implementing projects on the ground.

### **T&E and Candidate species determination for Alternative 3 –**

May affect, but is not likely to adversely affect known populations or habitat of *Spiranthes diluvialis*, *Mirabilis Macfarlanei* or *Castilleja christii*.

Nevertheless, given that we cannot predict the exact location or nature of future projects, we cannot completely discount the probability to adversely affect undiscovered populations or unsurveyed potential habitat for these species under this Alternative.

### **Sensitive species determination for Alternative 3 –**

May impact individuals, but is not likely to cause a trend towards Federal listing or a loss of viability for any sensitive species.

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### **Modified Idaho Roadless Rule– Alternative 4**

The Modified Idaho Roadless Rule was developed in response to public comments on the draft EIS. This alternative proposes five themes for the Idaho IRAs. Each theme contains different land management restrictions. See Chapter 2 of the FEIS for detailed description and/or modification of theme areas:

- Wild Land Recreation
- Primitive
- Backcountry/Restoration (Backcountry)
- General Forest, Rangeland, and Grassland (GFRG)
- Special Areas of Historic or Tribal Significance (SAHTS)

Of the themes, the Wild Land Recreation, Primitive, and SAHTS themes are the most restrictive because they prohibit road construction, road reconstruction and permit timber cutting only under limited situations. Discretionary mineral activities are prohibited under these themes. Under this alternative, the Forest Service would not authorize road construction/reconstruction or surface occupancy for new mineral leases in IRAs managed under these three themes.

The Backcountry theme allows some road construction, and timber cutting. The allowances include all the permissions in the 2001 Roadless Rule. New roads to facilitate timber harvest would be temporary and must be decommissioned after use.

Within the Backcountry theme a geographic area (CPZ) was added to respond to public comments to better address community protection from fire. About 442,000 acres are estimated to be within the Backcountry CPZ. Temporary roads could only be constructed where needed to facilitate timber harvest needed to reduce adverse effects of wildland fires to protect communities within this area. Temporary roads would be decommissioned after use. Outside the CPZ temporary roads could be constructed facilitate timber cutting to reduce significant risk of wildland fire effects on at-risk communities or municipal water supply systems. Temporary roads may only be constructed outside the CPZ if the activity cannot be reasonably accomplished without a temporary road and one or more roadless area characteristic is maintained or restored over the long-term.

Projected road construction and reconstruction in IRAs under this alternative is 2.2 miles would be constructed and 1.1 miles reconstructed per year (50 miles total in 15 years). This estimate includes both permanent and temporary roads for timber cutting and non-timber related activities. This level of construction would be spread across about 6 million acres.

About 405,900 acres are in the GFRG theme which permits road construction and reconstruction activities, as well as timber cutting. The projected timber harvest offer of 5.0 MMBF is estimated to occur annually on 1,000 acres. Road construction and reconstruction, and timber cutting would primarily occur in the GFRG theme with a limited amount in the Backcountry theme, mostly in the CPZ.

There are 14,460 acres of known unleased phosphate deposits on the Caribou-Targhee National Forest. Under the Modified Idaho Roadless Rule roads could be constructed or reconstructed to access about 5,770 acres<sup>4</sup> of unleased phosphate deposits in the GFRG theme. These deposits are located within nine roadless areas (Dry Ridge, Huckleberry Basin, Meade Peak, Sage Creek, Schmid Peak, and Stump Creek on the Caribou portion of the forest and could eventually be mined over an extended period of time (50 or more years). Site-specific analysis would occur prior to any future exploration or development and mitigations applied.

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<sup>4</sup> Based on past history, phosphate mining could occur on an additional 810 acres around unleased KPLAs on the Caribou-Targhee National Forest (see section 3.5 Minerals and Energy).



About 8,690 acres of unleased phosphate deposits are in the Primitive, Backcountry and GFRG theme in the Bear Creek Roadless Area. Road construction and reconstruction would be prohibited to access these deposits. Without road access it is unlikely these deposits would be developed (Minerals and Energy Specialist Report); therefore there would be no effect on botanical resources found in this area.

Of the categories, the GFRG classification would provide the most possibility of ground disturbing activities, as well as the CPZ within the Backcountry theme. Wild Land Recreation and Primitive themes have fewer permissions than the 2001 Rule. Table 5 shows the number of acres in each theme by alternative.

### **Summary of Effects –**

Under the Modified Roadless Rule alternative about 203,700 acres are reclassified from the most permissive category (GFRG) to other categories which primarily focus on hazardous fuels reduction and protection of communities and their water supplies. This change benefits TEPCS species that fell within the GFRG category under the Proposed Rule. Within the CPZ's, temporary roads and tree removal activities are permitted where needed to reduce significant wildland fire risks to communities. In the Backcountry CPZ theme, timber cutting or removal is permitted for improvement of TEPCS habitat or to maintain and/or restore ecosystem composition and structure. The 46 sensitive plant EO's and 6 threatened and candidate EO's that fall within this category may benefit from projects proposed under this theme since projects are intended, among other things, to improve conditions that support TEPCS plant and animal communities (tables 6 and 7). There are only 3 EO's sensitive plant species in the GFRG theme and no threatened or candidate species.

Within the Primitive and SAHTS themes and most of the Backcountry theme outside CPZ, only existing roads or aerial systems may be used to meet these same objectives for ecosystem and TEPCS species habitat restoration. There are 100 EO's (up from the 82 EO's in Alternative 3) found in the combined Primitive/SAHTS themes and this should increase the benefits to TEPCS plants. Approximately 102 sensitive plant EO's occur within the Wildland Recreation Theme, where road construction is prohibited as is timber cutting, except for personal or administrative use such as maintenance of trails, etc. No additional impacts to TEPCS species beyond those consistent with current applicable plan components are expected by these themes under the Modified Rule.

As with the 2001 Roadless Rule, the Modified Rule prohibits road construction and reconstruction for new mineral leases in all themes with the exception of specific phosphate deposits in the GFRG theme. In addition, the Modified Rule prohibits surface use and occupancy of new mineral leases in the Wild Land Recreation, Primitive and SAHTS themes. Surface use and occupancy would be permitted in the Backcountry and GFRG themes if allowed in the forest plans. It is unlikely new mineral development would occur in any of the themes without road access; therefore there would be limited risk to TEPCS plant resources.

Potential adverse impacts to TEPCS plant species through direct mortality, habitat loss, degradation and disturbance associated with roads, timber harvest, discretionary mining, and other activities would be lessened between the Proposed Rule and the Modified Rule. At the programmatic level, it is difficult to determine effects to individual plant populations or specific habitat niches, except on a very broad scale; however, since the Modified Rule increases the number of TEPCS EO's within the more protective themes, those species and populations

falling within these theme areas will likely benefit. Regardless of this broad scale of analysis for such localized and/or endemic species, this Agency and other government agencies with jurisdictional responsibilities would still retain the tools necessary to manage these resources. The proposed action would not change current TEPCS policies or direction and would require site-specific analysis prior to implementing projects on the ground.

#### **T&E and Candidate species determination for Modified Roadless (Alternative 4) –**

May affect, but is not likely to adversely affect known populations or habitat of *Spiranthes diluvialis*, *Mirabilis macfarlanei* or *Castilleja christii*.

Nevertheless, given that we cannot predict the exact location or nature of future projects, we cannot completely discount the probability to adversely affect undiscovered populations or unsurveyed potential habitat for these species under the Modified Rule Alternative.

#### **Sensitive species determination for Modified Roadless (Alternative 4) –**

May impact individuals, but is not likely to cause a trend towards Federal listing or a loss of viability for any sensitive species.

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#### **Cumulative Effects -**

The proposed action is expected to have minimal affects on any known occurrences of Regional Foresters' sensitive plants within IRAs in Idaho, and indirect effects are expected to be unappreciable. Some sensitive species may likely benefit from the added protections built into several theme areas. Since all foreseeable federal actions within the project areas are required to be evaluated for impacts to threatened, endangered, and sensitive plant species, foreseeable actions would be modified to mitigate anticipated impacts resulting from project activities as required by Forest Service policy (FSM 2670) and the Endangered Species Act. Due to the varying nature of potential risks of direct and indirect impacts to individual species and populations within IRAs, the implementation of the proposed action will not result in any significant negative influences on the scope or magnitude of cumulative effects as currently assessed.

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## Appendix A –

The following information provides examples of the most relevant conservation direction (e.g., objectives, goals, standards and guidelines) for TEPCS plant species. It is not necessarily comprehensive in that most but not necessarily all possible standards, guidelines, objectives, and goals from Idaho Forest Plans that are relevant are included.

Current management direction for threatened, endangered, proposed, candidate and sensitive plant species can be found in:

- Forest Service Manual and Handbooks (FSM/H 2670)
- Individual Forest Land and Resource Management Plans (LRMPs), supplements and amendments for all Idaho Forests and the Hell's Canyon National Recreation Area Comprehensive Management Plan, including the Wallowa-Whitman NF.
- Species-specific Recovery Plans, Draft Recovery Plans, and Conservation Strategies and Agreements
- Regional Forester policy and management direction
- Existing projects with informal or formal consultation with the USFWS

### Existing Management Direction for TEPC Species

#### Southwest Idaho Forest Plans

Habitats for threatened and endangered species are managed consistent with established and approved Recovery Plans. Management actions either contribute to, or do not prevent recovery or de-listing of these species. Habitats for proposed and candidate species are managed to help preclude listing as threatened or endangered under the Endangered Species Act (ESA). Forest programs are at levels that do not threaten the persistence of threatened, endangered, proposed, or candidate species populations.

Table A-1 summarizes both general and specific direction applicable to TEPC plant species outlined in the FEIS (Section III-pp. 8-15) and revised LRMPs for the Southwest Idaho Ecogroup: Boise, Payette, and Sawtooth National Forests.



**Table A-1 Management direction for threatened, endangered, proposed, and candidate species**

Direction	Number	Manangement direction description
Goals	TEGO1	Provide habitat capable of contributing to the survival and recovery of species listed under the ESA.
	TEGO2	Provide habitat that will help keep Proposed or Candidate species from becoming listed.
	TEGO3	Balance the need for restorative actions to address the long-term threats to listed and proposed species with the short-term need to protect listed and proposed species and their habitats.
	TEGO4	Design and implement management actions to provide for ecological conditions, population viability, reproductive needs, and habitat components for Threatened, Endangered, Proposed, and Candidate (TEPC) species.
	TEGO5	Provide for well-distributed habitat capable of maintaining self-sustaining, complex interacting groups of TEPC species.
	TEGO6	Provide habitat capable of maintaining stable or increasing trends in abundance of TEPC species in all recovery units.
Objectives	TEOB3	Identify and reduce road-related effects on TEPC species and their habitats using the Watershed and Aquatic Recovery Strategy and other appropriate methodologies.
	TEOB6	During fine-scale analyses, identify practices or facilities that are adversely affecting TEPC species or their habitats, and prioritize opportunities to mitigate, through avoidance or minimization, adverse effects to TEPC species.
	TEOB18	During fine-scale analyses in areas where TEPC species occur, identify opportunities to maintain desired habitat conditions or restore degraded habitat for TEPC species.
Standards	TEST1	The Forest shall consult with the NMFS and Fish and Wildlife Service as needed, and appropriate, to comply with consultation requirements under the Endangered Species Act and Magnuson-Stevens Act.
	TEST2	For forest-wide, watershed, or project-level Biological Opinions (BOs) and Biological Assessments (BAs) with letters of concurrence, requirements shall continue to apply until their expiration date unless these documents are specifically updated during further review with related regulatory agencies.
	TEST3	Design and implement projects to meet the terms of Forest Service approved portions of recovery plans. If a recovery plan does not yet exist, use the best information available (for example, BAs, BOs, letters of concurrence, Forest Service-approved portions of Conservation Strategies) until a recovery plan is written and approved.
	TEST4	Management actions that have adverse effects on Proposed or Candidate species or their habitats, shall not be allowed if the effects of those actions would contribute to listing of the species as Threatened or Endangered under the ESA.
	TEST6	Management actions shall be designed to avoid or minimize adverse effects to listed species and their habitats.
Guidelines	TEGU2	For proposed actions that may affect potential habitat of TEPC species, identify potential habitat and determine species presence within or near the project area. Document the rationale for not identifying potential habitat and determining species presence for TEPC species in the project record.
	TEGU3	Management actions in occupied Proposed or Candidate species habitat should be modified or relocated if the effects of the actions would contribute to a trend toward ESA listing for these species.
	TEGU7	During site/project-scale analysis and review, a Forest botanist should review insecticide or herbicide spray plans and prescribed burning plans to determine whether effects to TEPC plant species and their pollinators should be mitigated, through avoidance or minimization.

In addition to the General Management Direction for TEPC species provided in the above table, the following (Table A-2) pertinent Management Direction Botanical Resources is provided from Southwest Idaho FEIS Chapter III pages 32-34:

**Table A-2. Management direction for botanical resources**

Direction	Number	Botanical resources management direction description
Goals	BTGO3	Maintain or restore globally rare plants identified as the Natural Heritage Program G1, G2, and G3 and/or S1 and S2 species, and provide for their continued compositional and functional integrity for those species for which we have habitat
Objectives	BTOB2	During fine-scale analyses in areas containing sensitive species habitat, identify and prioritize opportunities for restoring degraded Sensitive species habitat.
Standards	BTST1	Management actions that occur within occupied sensitive plant species habitat must incorporate measures to ensure habitat is maintained where it is within desired conditions, or restored where degraded.
	BTST3	Design and implement projects to meet the Forest Service approved portions of Conservation Strategies and Agreements for Sensitive species.
Guidelines	BTGU1	For site/project-scale analysis, suitable habitat should be determined for Sensitive species within or near the project area. Conduct surveys for those species with suitable habitat to determine presence. Document the rationale for not conducting surveys for other species in the project record.
	BTGU5	Coordinate with Forest botanists to consider sensitive species habitat needs when designing and implementing management activities that may affect these species or their habitats.

### Targhee National Forest Plan

The applicable Goals, Objectives, Standards and Guidelines for Ute Ladies' tresses orchid (*Spiranthes diluvialis*) from the Targhee NF Plan (Chapter III-14) are as follows:

#### Goals – Plant Species Diversity

Goal 1. Preserve unique formations within a landscape (such as cliffs, bogs, seeps, talus slopes, warm or alkaline springs, pot holes, and rock outcroppings) that provide habitat to plant species not common to the overall landscape and contribute to the species diversity within the landscape.

Goal 2. Provide necessary protection and management to conserve listed threatened, endangered and sensitive plant species.

#### Standards and Guidelines – Plant Species Diversity

Standard 4. Information on the presence of listed threatened, endangered or sensitive plant species will be included in all assessments for vegetation and/or ground disturbing management activities. Appropriate protection and mitigation measures will be applied to the management activities.

#### Objectives – Ute Ladies' Tresses (*Spiranthes diluvialis*)

Objective 1. Map suitable habitat (generally within wetland/riparian/floodplain areas below 7,000 feet elevation) on the Forest within three years of implementation of the ROD



Objective 2. Complete intensive surveys of suitable habitat to document presence of plants within five years of implementation of the ROD

### **Standards and Guidelines - Ute Ladies' Tresses (*Spiranthes diluvialis*)**

Standard 1. For known populations within livestock grazing allotments, provide appropriate protection, particularly during the flowering and seed-set periods (generally August and September).

Standard 2. Allow no ground disturbing activities or changes in hydrology within occupied habitat without review by botanist and interdisciplinary team.

### **Hells Canyon National Recreation Area Management Plan**

The following pertinent management direction (Table A-3) for threatened and endangered species for Hells Canyon National Recreation Area can be found in the Hells Canyon National Recreation Comprehensive Management Plan FEIS (HCNRACMP) Appendix C – Goals, Objectives, Standards and Guidelines (Appendix C – pages 88-94).

**Table A-3. Hells Canyon NRA comprehensive management plan direction**

<b>Direction</b>	<b>Number</b>	<b>Hells Canyon NRACMP management direction description</b>
Goals		Maintain or restore habitat to provide viable populations of rare and endemic species in the HCNRA.
Objectives	TES-O1	Manage Habitat and populations of federally listed threatened, endangered, or proposed plant species to ensure their continued existence and recovery in the HCNRA. Ensure that ongoing and new management actions do not jeopardize federally listed threatened, endangered or proposed plant species. Implement restoration and recovery activities that would facilitate removal of species from the federal threatened and endangered species list. (Forest Plan, FSM 2670).
	TES-O3	Implement recovery plans for federally listed threatened, endangered or proposed plant species cooperatively with the USFWS. Contribute to revisions of recovery plans, and carry out recommended actions in recovery plans. (Forest Plan, FSM 2670).
Standards	TES-S1	When evaluating ongoing and new actions, survey probable habitat for rare plants. Mitigate potential conflicts or modify project to ensure the protection of rare plants and their associated habitat (Forest Plan, FSM 2670).
	BIO-S1	During project-level planning, to the extent feasible, survey and document the location of populations of rare and endemic plant species, rare combinations of outstanding and diverse ecosystems and parts associated therewith; and combinations of aquatic, terrestrial, and atmospheric habitats.
Guidelines	TES-G1	To achieve recovery plan goals consider reintroduction of federally listed species, in suitable, currently unoccupied habitat.
	TES-G2	Consider modifications to activities such as seasonal or permanent closures for roads, trails, and exclusions of domestic livestock grazing, and modifications of grazing plans where conflicts with protection of rare plant species are identified.